Determination of a new gravimetric geoid of Japan, JGEIOD2000

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A new gravimetric geoid model for Japan, JGEOID2000, is determined in finer resolution, by 1D-FFT of the generalized Stokes integral in a remove-restore manner, with reference to EGM96 global geopotential model. Newly obtained land gravity data are added, and the total data number on land is about 6.5 times as that used in the previous models. Network adjusted ship gravity data are merged with KMS99 marine gravity anomaly model, which realizes an improved recovery of the gravity field. Modification of the Stokes kernel is considered to reduce the truncation errors at long wavelengths. The geoid models are evaluated by comparisons with the nation-wide net of GPS at benchmarks. For improving the accuracy, GPS/leveling data are re-analyzed in terms of GPS ellipsoidal heights and leveled ones.